Dr. Stephen McSorley

Stephen J. McSorley and Marc K. Jenkins
University of Minnesota, Center for Immunology and Department of Microbiology, 312 Church St S.E., Minneapolis, MN55455.

$CD4^+$ T cells are required to combat various intestinal microbes, yet little is known about the activation of such pathogen-specific cells in vivo. We describe here an adoptive transfer system that enables visualization of Salmonella-specific $CD4^+$ T cells as they respond to an oral infection. These naïve cells reside in all lymphoid tissues but undergo clonal expansion and follicular migration exclusively within Gut-Associated Lymphoid Tissue (GALT) after infection. Surprisingly, T cell activation was not observed in the spleen of infected mice, despite the presence of bacteria and antigen-specific $CD4^+$ T cells in the same anatomical location. In addition, Salmonella-specific $CD4^+$ T cells activated in GALT did not to migrate to the liver, the primary non-lymphoid site of bacterial replication. Therefore, the $CD4^+$ T cell response to Salmonella is restricted to the local mucosal environment despite the systemic nature of this infection.